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Kretz-Rommel, Anke

<120> NOVEL ANTI-DC-SIGN ANTIBODIES

<130> 112 PCT (1087-96 PCT)

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<151> 2003-12-15

<160> 62

<170> PatentIn version 3.2

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<220>  
<223> majority of murine clones

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1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Ala Gln  
 65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asp Thr Leu Pro Trp  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
 100 105

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Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15

Glu Thr Ile Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile His Asn Tyr  
 20 25 30

Leu Ala Trp Tyr Gln Gln Asn Gln Gly Lys Ser Pro Gln Leu Leu Val  
 35 40 45

Tyr Asn Ala Lys Thr Leu Ala Val Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Gln Phe Ser Leu Lys Ile Val Ser Leu Gln Pro  
 65 70 75 80

Glu Asp Phe Gly Asn Tyr Tyr Cys Gln His Phe Trp Asn Thr Pro Trp  
 85 90 95

Thr Phe Gly Arg Gly Thr Lys Leu Glu Ile Lys Arg Ala  
 100 105

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Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
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Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Gln Asp Ile Asp Asn Tyr  
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Asn Asn Leu Ala Gln  
65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asp Thr Leu Pro Phe  
85 90 95

Thr Phe Gly Ser Gly Thr Thr Leu Glu Ile Lys Arg Ala  
100 105

<210> 12  
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<213> murine

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Asp Ile Pro Met Thr Gln Thr Thr Ser Ser Gln Ser Ala Ser Leu Gly  
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly

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55

60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln  
65 70 75 80

Glu Asp Leu Val Thr Tyr Phe Cys Gln Gln Gly Lys Thr Leu Pro Trp  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
100 105

<210> 13  
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<212> PRT  
<213> murine

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Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser His Asp Ile Asn Asp Tyr  
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
35 40 45

Tyr Tyr Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Arg Gly  
50 55 60

Tyr Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Ala Gln  
65 70 75 80

Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly His Thr Leu Pro Tyr  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
100 105

<210> 14  
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<213> murine

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Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Ala Gln  
 65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asp Lys Leu Pro Phe  
 85 90 95

Thr Phe Gly Ser Gly Thr Thr Leu Glu Ile Lys Arg Ala  
 100 105

<210> 15  
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Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Gln Ser Ala Ser Leu Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln  
 65 70 75 80

Glu Asp Leu Ala Thr Tyr Phe Cys Gln Gln Gly Lys Thr Leu Pro Trp  
 85 90 95



Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
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<210> 16  
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Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Phe Ala Ser Leu Gly  
1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Arg Asn Asn  
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
35 40 45

Tyr Tyr Thr Ser Ser Leu Pro Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

Ser Arg Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln  
65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asp Thr Leu Pro Pro  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
100 105

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<213> murine

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Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser His Asp Ile Asn Asp Tyr  
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile

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Tyr Tyr Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Arg Gly  
50 55 60

Tyr Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Ala Gln  
65 70 75 80

Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly His Thr Leu Pro Tyr  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala  
100 105

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Glu Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
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Ser Leu Ser Leu Ala Cys Ser Val Thr Gly Tyr Ser Ile Thr Ser Gly  
20 25 30

Tyr Tyr Trp Asn Trp Ile Arg Gln Ser Pro Gly Asn Lys Leu Glu Trp  
35 40 45

Met Gly Tyr Ile Ser Tyr Asp Gly Asn Ser Asp Tyr Asn Pro Ser Phe  
50 55 60

Lys Asn Arg Ile Ser Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe  
65 70 75 80

Leu Arg Leu Asn Ser Leu Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys  
85 90 95

Val Arg Asp Asp Ser Gly Arg Phe Pro Gln Trp Gly Gln Gly Thr Leu  
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Val Thr Val Ser Ala  
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Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
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Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr  
 20 25 30

Tyr Met His Trp Val Lys Gln Ser His Val Lys Ser Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Asn Pro Tyr Asn Gly Ala Thr Ser Tyr Asn Gln Asn Phe  
 50 55 60

Lys Asp Lys Ala Ser Leu Thr Val Asp Lys Ser Ser Thr Thr Val Tyr  
 65 70 75 80

Met Glu Val His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Val Arg Ser Asn Asp Gly Tyr Tyr Ser Tyr Pro Met Asp Tyr Trp Gly  
 100 105 110

Gln Gly Thr Ser Val Thr Val Ser Ser  
 115 120

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Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
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Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr  
 20 25 30

Tyr Met His Trp Val Lys Gln Ser His Val Lys Ser Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Asn Pro Tyr Asn Gly Ala Thr Ser Tyr Asn Gln Asn Phe  
 50 55 60

Lys Asp Lys Ala Ser Leu Thr Val Asp Lys Ser Ser Thr Thr Val Tyr  
 65 70 75 80

Met Glu Val His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Val Arg Ser Asn Asp Gly Tyr Tyr Ser Tyr Pro Met Asp Tyr Trp Gly  
 100 105 110

Gln Gly Ser Ser Val Ala Val Ser Ser  
 115 120

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Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
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Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr  
 20 25 30

Tyr Met His Trp Val Lys Gln Ser His Val Lys Ser Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Asn Pro Tyr Asn Gly Ala Thr Tyr Tyr Asn His Asn Phe  
 50 55 60

Lys Asp Lys Ala Thr Leu Thr Val His Lys Ser Ser Thr Thr Val Tyr  
 65 70 75 80

Met Glu Val His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Val Arg Ser Asn Asp Gly Tyr Tyr Ser Tyr Pro Met Asp Tyr Trp Gly

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Gln Gly Thr Ser Val Thr Val Ser Ser  
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<400> 22

Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Thr  
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Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr  
 20 25 30

Tyr Ile His Trp Val Arg Gln Arg His Val Lys Ser Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Asn Pro Tyr Ser Gly Ala Thr Ser Tyr Asn Gln Ser Phe  
 50 55 60

Lys Asp Lys Ala Ser Leu Thr Val Asp Lys Ser Ser Thr Thr Ala Tyr  
 65 70 75 80

Met Glu Val His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Val Arg Ser Asn Asp Gly Tyr Tyr Ser Tyr Pro Met Asp Tyr Trp Gly  
 100 105 110

Gln Gly Thr Ser Val Thr Val Ser Ser  
 115 120

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Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Thr  
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Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr  
20 25 30

Tyr Ile His Trp Val Arg Gln Arg His Val Lys Ser Leu Glu Trp Ile  
35 40 45

Gly Arg Ile Asn Pro Tyr Ser Gly Ala Thr Ser Tyr Asn Gln Ser Phe  
50 55 60

Lys Asp Lys Ala Ser Leu Thr Val Asp Lys Ser Ser Thr Thr Ala Tyr  
65 70 75 80

Met Glu Val His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Val Arg Ser Asn Asp Gly Tyr Tyr Ser Tyr Pro Met Asp Tyr Trp Gly  
100 105 110

Gln Gly Thr Ser Val Thr Val Ser Ser  
115 120

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Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr  
20 25 30

Tyr Met His Trp Val Lys Gln Ser His Val Lys Ser Leu Glu Trp Ile  
35 40 45

Gly Arg Ile Asn Pro Tyr Asn Gly Ala Thr Ser Tyr Asn Gln Asn Phe  
50 55 60

Lys Asp Lys Ala Ser Leu Thr Val Asp Lys Ser Ser Thr Thr Val Tyr  
65 70 75 80

Met Glu Val His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
85 90 95

Val Arg Ser Asn Asp Gly Tyr Tyr Ser Tyr Pro Met Asp Tyr Trp Gly  
 100 105 110

Gln Gly Thr Ser Val Thr Val Ser Ser  
 115 120

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Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
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Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr  
 20 25 30

Tyr Met His Trp Val Lys Gln Ser His Val Lys Ser Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Asn Pro Tyr Asn Gly Ala Pro Ser Tyr Asn Gln Asn Phe  
 50 55 60

Lys Asp Lys Ala Ser Leu Thr Val Asp Glu Ser Ser Thr Thr Val Tyr  
 65 70 75 80

Met Glu Val His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Val Arg Ser Asn Asp Gly Tyr Tyr Ser Tyr Pro Met Asp Tyr Trp Gly  
 100 105 110

Gln Gly Thr Ser Val Thr Val Ser Ser  
 115 120

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<400> 26

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala

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Leu Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Tyr  
20 25 30

Tyr Ile His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asn Thr Ile Tyr Asp Pro Lys Phe  
50 55 60

Gln Gly Lys Ala Ser Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr  
65 70 75 80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Tyr Tyr Leu Gly Val Asp Tyr Trp Gly Gln Gly Thr Ser Val  
100 105 110

Thr Val Ser Ser  
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Glu Val Gln Leu Gln Gln Ser Gly Pro Asp Leu Val Lys Pro Gly Ala  
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Ser Val Arg Ile Ser Cys Lys Thr Ser Gly Phe Thr Phe Ala Asn Tyr  
20 25 30

Tyr Ile His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Trp Ile Phe Pro Gly Asn Phe Lys Thr Glu Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80



Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Gly Tyr Gly Tyr Ala Val Asp Tyr Trp Gly Gln Gly Thr Ser  
100 105 110

Val Thr Val Ser Ser Ala Lys Thr Thr  
115 120

<210> 28  
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<400> 28

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr  
20 25 30

Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Arg Ile Asp Pro Ala Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe  
50 55 60

Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr  
65 70 75 80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Asp Tyr Tyr Gly Ile Tyr Val Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

Thr Leu Thr Val Ser Ser Ala Lys  
115 120

<210> 29  
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<400> 29

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Ser Tyr  
20 25 30

Trp Met Gln Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Ala Ile Tyr Pro Gly Asp Gly Asp Thr Arg Tyr Thr Gln Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Ala Ser Glu Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Gly Gly Leu Lys Ser Phe Tyr Ala Met Asp His Trp Gly Gln  
100 105 110

Gly Thr Ser Val Thr Val Ser Ser Ala Lys  
115 120

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<212> PRT

<213> murine

<400> 30

Glu Val Gln Leu Gln Gln Ser Gly Pro Asp Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Arg Ile Ser Cys Lys Thr Ser Gly Phe Thr Phe Ala Ser Tyr  
20 25 30

Tyr Ile His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Trp Ile Phe Pro Gly Asn Phe Lys Thr Glu Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Arg Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Gly Tyr Gly Tyr Ala Val Asp Tyr Trp Gly Gln Gly Thr Ser  
100 105 110

Val Thr Val Ser Ser Ala Lys Thr  
115 120

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<211> 116

<212> PRT

<213> murine

<400> 31

Glu Val Gln Leu Gln Gln Ser Gly Pro Asp Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Arg Ile Ser Cys Lys Ala Ser Gly Phe Thr Phe Ala Ser Tyr  
20 25 30

Tyr Ile His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Trp Ile Phe Pro Gly Asn Asn Asn Thr Lys Ser Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Gly Tyr Gly Tyr Ala Val Asp Tyr Trp Gly Gln Gly Thr Ser  
100 105 110

Val Thr Val Ser  
115

<210> 32

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<212> PRT  
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<400> 32

Glu Val Gln Leu Gln Gln Ser Gly Pro Asp Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Arg Ile Ser Cys Lys Ala Ser Gly Phe Thr Phe Ala Ser Tyr  
20 25 30

Tyr Ile His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Trp Ile Phe Pro Gly Asn Asn Asn Thr Lys Ser Asn Glu Lys Phe  
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Gly Tyr Gly Tyr Ala Val Asp Tyr Trp Gly Gln Gly Thr Ser  
100 105 110

Val Thr Val Ser Ser Ala Lys Thr  
115 120

<210> 33  
<211> 118  
<212> PRT  
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<400> 33

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Thr Ala Ser Asp Phe Asn Ile Lys Asp Thr  
20 25 30

Tyr Ile Gln Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Val  
35 40 45

Gly Arg Ile Asp Pro Ala Asn Gly Glu Ile Lys Tyr Asp Pro Lys Phe

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55

60

Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr  
65 70 75 80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Thr Ala Tyr Phe Leu Val Tyr Trp Gly Gln Gly Thr Leu Val Thr Val  
100 105 110

Ser Ala Ala Lys Thr Thr  
115

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<400> 34

Glu Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln  
1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Arg Tyr  
20 25 30

Thr Val His Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu  
35 40 45

Gly Met Ile Trp Gly Gly Gly Thr Thr Asp Tyr Asn Ser Ala Leu Lys  
50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Glu Ser Gln Val Phe Leu  
65 70 75 80

Lys Met Asp Ser Leu Gln Thr Asp Asp Thr Ala Lys Tyr Tyr Cys Ala  
85 90 95

Arg Ile Asn Phe Gly Ile Leu Gly Tyr Trp Gly Gln Gly Thr Leu Val  
100 105 110

Thr Val Ser Ala Ala Lys Thr Thr  
115 120

<210> 35  
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<400> 35

Glu Val Gln Leu Gln Gln Ser Gly Thr Glu Leu Val Arg Pro Gly Ala  
 1 5 10 15

Leu Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Tyr  
 20 25 30

Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile  
 35 40 45

Gly Trp Ile Asp Pro Lys Asn Gly Asn Thr Ile Tyr Asp Pro Lys Phe  
 50 55 60

Gln Val Lys Ala Ser Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr  
 65 70 75 80

Leu Gln Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Thr Thr Thr Tyr Pro Asn Ala Leu Asp Tyr Trp Gly Gln Gly Thr Ser  
 100 105 110

Val Thr Val Ser Ser Ala Lys Thr Thr  
 115 120

<210> 36  
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<400> 36

Asp Ile Ala Met Thr Gln Ser His Lys Phe Met Ser Thr Pro Val Gly  
 1 5 10 15

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ser Thr Ala  
 20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile  
 35 40 45

Tyr Ser Ala Ser Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala  
 65 70 75 80

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln His Tyr Ile Thr Pro Leu  
 85 90 95

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg  
 100 105

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<400> 37

Asp Val Val Met Thr Gln Thr Pro Leu Thr Leu Ser Val Thr Ile Gly  
 1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Asp Ser  
 20 25 30

Asp Gly Lys Thr Tyr Leu Asn Trp Leu Leu Trp Arg Pro Gly Gln Ser  
 35 40 45

Pro Lys Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Trp Gln Asp  
 85 90 95

Thr His Phe Pro His Val His Val Arg Cys Trp Asp Gln Ala Gly Thr  
 100 105 110

Thr

<210> 38  
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<212> PRT  
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<400> 38

Ser Ile Val Leu Thr Gln Ser Pro Lys Ser Met Ser Met Ser Val Gly  
1 5 10 15

Glu Arg Val Thr Leu Ser Cys Lys Ala Ser Glu Asn Val Gly Thr Tyr  
20 25 30

Val Ser Trp Tyr Gln Gln Lys Pro Asp Gln Ser Pro Lys Leu Leu Ile  
35 40 45

Tyr Gly Ser Ser Asn Arg Ser Thr Gly Val Pro Asp Arg Phe Thr Gly  
50 55 60

Ser Gly Ser Ala Thr Asp Phe Thr Leu Thr Ile Ser Ser Val Gln Ala  
65 70 75 80

Glu Asp Leu Ala Asp Tyr His Cys Gly Gln Ser Tyr Asn Tyr Pro Pro  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
100 105

<210> 39  
<211> 108  
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Asp Ile Val Leu Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly  
1 5 10 15

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ser Thr Ala  
20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile  
35 40 45

Tyr Trp Ala Ser Thr Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly  
50 55 60



Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Val Gln Ala  
65 70 75 80

Glu Asp Leu Ala Leu Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr Pro Arg  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
100 105

<210> 40  
<211> 108  
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Arg Tyr Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
1 5 10 15

Asp Arg Val Thr Ile Ser Cys Ser Ala Ser Gln Asp Ile Thr Asn Tyr  
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Leu  
35 40 45

Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Pro  
65 70 75 80

Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Tyr Gly Asn Leu Pro Tyr  
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
100 105

<210> 41  
<211> 108  
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<400> 41

Asp Ile Gln Cys Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln  
 65 70 75 80

Ala Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Lys Thr Leu Pro Trp  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
 100 105

<210> 42  
 <211> 108  
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<400> 42

Arg His Gln Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly  
 1 5 10 15

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ser Thr Ala  
 20 25 30

Val Ala Trp Tyr Gln Gln Asn Pro Gly Gln Ser Leu Lys Leu Leu Ile  
 35 40 45

Tyr Trp Ala Ser Thr Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Asn Ser Val Gln Ala  
 65 70 75 80

Glu Asp Leu Thr Leu Tyr Tyr Cys Gln Gln His Tyr Ile Thr Pro Leu  
 85 90 95

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg  
 100 105

<210> 43  
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<400> 43

Arg Tyr Pro Asp Ala Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln  
 65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Pro  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
 100 105

<210> 44  
 <211> 112  
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<400> 44

Asp Ile Val Gln Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly  
 1 5 10 15

Gln Arg Ala Thr Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp  
 20 25 30

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
 35 40 45

Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu His Ser Gly Val Pro Ser  
50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser  
65 70 75 80

Asn Leu Glu Gln Ala Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Lys  
85 90 95

Thr Leu Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg  
100 105 110

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<400> 45

Gln His Phe Trp Asn Thr Pro Trp Thr  
1 5

<210> 46  
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<400> 46

Gln Gln Gly His Thr Leu Pro Tyr Thr  
1 5

<210> 47  
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<400> 47

Ser Asn Asp Gly Tyr Tyr Ser  
1 5

<210> 48  
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<400> 48

Arg Tyr Tyr Leu Gly Val Asp  
1 5

<210> 49  
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Asp Asp Ser Gly Arg Phe Pro  
1 5

<210> 50  
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<400> 50

Tyr Gly Tyr Ala Val Asp Tyr  
1 5

<210> 51  
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<400> 51

Tyr Tyr Gly Ile Tyr Val Asp Tyr  
1 5

<210> 52  
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Phe Leu Val Tyr  
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<400> 53

Asn Phe Gly Ile Leu Gly Tyr  
1 5

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<400> 54

Tyr Pro Asn Ala Leu Asp Tyr  
1 5

<210> 55  
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<212> PRT  
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<400> 55

Gly Leu Lys Ser Phe Tyr Ala Met Asp His  
1 5 10

<210> 56  
<211> 9  
<212> PRT  
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<400> 56

Gln Gln Gly Lys Thr Leu Pro Trp Thr  
1 5

<210> 57  
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<400> 57

Gln Gln Gly Asn Thr Leu Pro Pro Thr  
1 5

<210> 58  
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<212> PRT  
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<400> 58

Gln Gln His Tyr Ile Thr Pro Leu Thr  
1 5

<210> 59  
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<212> PRT  
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<400> 59

Gln Gln Tyr Gly Asn Leu Pro Tyr Thr  
1 5

<210> 60  
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<212> PRT  
<213> murine

<400> 60

Gln Gln Tyr Tyr Ser Thr Pro Arg Thr  
1 5

<210> 61  
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<212> PRT  
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<400> 61

Gly Gln Ser Tyr Asn Tyr Pro Pro Thr  
1 5

<210> 62  
<211> 9  
<212> PRT  
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<400> 62

Trp Gln Asp Thr His Phe Pro His Val  
1 5